UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 February 2010</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1 and 4-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 and 4-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>16 June 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Status of Claims:

Claims 1 and 4-15 are pending in this Office action.

Claims 1, 8 and 11-13 are amended.

Claims 2 and 3 are cancelled.

Objections to specification and claims are withdrawn based on applicant's

amendments to the claims.

Rejection under 35 USC 101 is withdrawn based on applicant's amendment to

the claim 13.

Response to Arguments

Applicant's arguments, see pages 9 and 10, filed 02-22-2010, with respect to the

rejection(s) of claim(s) 1 under 35 U.S.C. 103 have been fully considered and are

persuasive. Therefore, the rejection has been withdrawn. However, upon further

consideration, a new ground(s) of rejection is made in view of different interpretation of

the previously applied reference and newly found prior art reference(s).

Applicant's Invention as Claimed:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-8, 10-13 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Topp et al. ("Web Based Service for Embedded Devices") in view of Andersson et al. (WO 01/02953) in view of ABB ("Integrate IT Aspect Integrator Platform™ Version 2.0: Integration Guideline") in view of Fielding et al. (RFC 2068: Hypertext Transfer Protocol -- HTTP/1.1").

Regarding claim 1, (currently amended) Topp discloses a method to respond to a request ("web server responds to a client request" Topp bottom of page 147 section 3.3) for a function of a real-world object connected to a control system ("embedded web server, which offers a HTML based user interface and allows the user to do device control, diagnosis, and monitoring tasks...integrating the devices functionality into the AIP" Topp page 144 section 2.4; Topp page 147 figure 5), which function is represented as an Aspect of an Aspect Object (Topp page 144 figure 1 "Aspects" and "Model object"), the method comprising:

generating a web request ("http-request from the service client" Topp page 148 description underneath figure 6) for the function of the real world object ("real world objects are modeled through aspect objects, to which functionality is added by means of Aspects...interfaces to Aspect Systems, which in turn implement the appropriation function" Topp page 144 description underneath figure 1) with a world wide web presentation unit installed on a device, ("On the service host a standard web browser could be used as s[i]mple user interface as well as a AIP operator station" Topp page

145 description underneath figure 2; "allows the user to do device control....using a standard internet browser" Topp page 144 section 2.4)

the web request comprising a Uniform Resource Locator ("http://..." Topp figure 6),

transmitting the web request from the device through a network, (Topp page 148 figure 6, i.e. arrow from "Service Client," through a globe symbol representing Internet, toward the controller with embedded web server on the right side)

receiving the web request in a web server of the control system, (Topp page 148 figure 6, i.e. embedded web server in the controller; "http-request from the service client...is processed by the web server" Topp page 148 description underneath figure 6)

transmitting the web request to a software application ("the server calls a registered object method" Topp page 148 description underneath figure 6; "From the portal page of the device the user is linked to the various services...AIP provides standard aspect categories to connect to web servers and to show up the HTML information...aspect object...is equipped with some aspects linked to the appropriate web pages..." Topp bottom half of page 148; i.e. the web server provides various services to user by requesting for interfaces to Aspect objects as shown in figure 1 which is provided by the Aspect Integrator Platform, a software platform made up of pieces of software implementing functions of a real object and allowing access to the information of the real object),

sending a response message from the web server to the world wide web presentation unit ("web server responds to a client request...sends a block of text over

the internet, mostly consisting of HTML-code describing the content of the answer and

its formatting" Topp page 147 section 3.3),

updating the world wide web presentation unit with the result of the performed

function of the real-world object ("[HTML-code] could be generated dynamically by the

server" Topp page 148 text above figure 6; "generates the html-respinse on the fly

incorporating some real time values of the system" Topp page 148 description of figure

6, i.e. the real time values from AIP software provided to the server are used in updating

the dynamic html-response).

Topp discloses Aspect Integrator Platform which is a software platform that

models real objects through Aspect Objects and adds special characteristics through

adding Aspects of the Aspect Object, which are pieces of software implementing

functions of the real objects (Topp page 143 section 2.3 and page 144 figure 1). Topp's

main discussion is the embedding of web server to provide web services to allow user

to access Aspect Integrator Platform, which can then access Aspects of Aspect Objects,

from standard Internet technologies. Topp may not explicitly discuss the specifics of the

Aspect Objects, the Aspects and the Aspect Systems used in its Aspect Integrator

Platform.

Andersson discloses specifics regarding Aspect Objects and Aspects of Aspect

Objects which represent real world objects. Andersson discloses a central control

system which integrates applications associated with Aspects of software implemented

Object representing real world object, which are the concepts of AIP discussed in Topp.

Andersson further discloses:

querying the identified Aspect Object from the software application for an

interface to an Aspect System Object associated with the Aspect ("Composite Object

may be queried by a client, through an Object Request Broker to find a reference for an

interface of the application associated with any of its Aspects" Andersson page 12 lines

3-5; "Composite Object uses the definitions...to identify the Aspect System Object that

implements the requested interface" Andersson page 13 lines 13-22),

receiving from the Aspect System Object to the software application a reference

to an interface of the Aspect System Object ("A reference to an interface is then

returned to the client" Andersson page 13 lines 21-22; "Aspect System Object 101 is

then queried through the interface IUnknown 4b for a reference...which reference 103 is

returned to the client" Andersson page 14 lines 9-11), which implements the function of

the identified Aspect ("aspect system is an application that implements one or more

Aspects" Andersson page 14 lines 28-29; "client queries...for an Aspect Type 8 which

lists an ASO Description 8a...From the same ASO Description 8a the class identifier 9

of the Aspect System Object which implements the interface is obtained" Andersson

page 13 line 27 through page 14 line 2; "CLSID 9, identifies a particular

application...associates a function...with the application that implements the function"

Andersson page 12 lines 18-20),

invoking functionality of the Aspect utilizing the reference ("Through these

interfaces, a client object can invoke the methods defined by the COM object"

Andersson page 9 lines 16-18; "Composite Object contains one or more Aspects...have

associations to applications that provide functionality" Andersson page 11 lines 14-18;

"client querying…for a function associated with on of the Aspects of Composite Object
10" Andersson page 12 line 30 through page 13 line 1; i.e. Andersson allows client to
find and invoke function or method of a real world object by querying the Composite
Object).

It would have been obvious to the person having ordinary skill in the art, at the
time of the invention, to have combined the teachings of Andersson with teachings
shown in Topp in order to comply with the Aspect Integrator Platform (AIP) used in
Topp's web server embedded controller.

Topp in view of Andersson may not explicitly disclose how HTTP request, which
is sent from user's device in Topp to the web server in embedded controller or URL is
used to identify the Aspects Object Model used in AIP.

In analogous art, ABB discloses a web server in AIP exposing information of the
device in forms of web services. ABB web server maps Aspects as URLs and provides
web services and web pages to the client (ABB, page 58 section 5.3). Therefore, within
the AIP software platform, the URL identifies Aspects of Aspect Objects, ergo identifies
Aspect Objects.

It would have been obvious to the person having ordinary skill in the art, at the
time of the invention, to have combined the teachings of ABB regarding AIP framework
with the teachings of Topp in view of Andersson in order to comply with the Aspect
Integrator Platform (AIP) used in Topp's web server embedded controller and the use of
http-request used in Topp.

Topp in view of Andersson in view of ABB does not explicitly discuss the customization of the response message to characteristics of the presentation unit on client device. Topp does discusses the formatting of the HTML-code response (Topp, page 147 section 3.3 "block of text...consisting of HTML-code describing the content of the answer and its formatting") and ABB discloses a web server which identifies and maps client type (ABB, page 58 section 5.3). However, both may not explicitly disclose the link between the client type and how queried results are displayed.

Fielding discloses a field of the http request header specifying information regarding user agent originating the request and a field in the http response used to specify the presentation of response selected by the server (Fielding, page 133 sections 14.42 and 14.43).

It would have been obvious to the person having ordinary skill in the art, at the time the invention was made to have utilize the field in request header and the information it yields shown in Fielding in order to adapt the response message to a specific browser type of the requester in order to avoid particular user agent limitations that come with specific browser type (Fielding, section 14.42).

Regarding claim 4, (previously amended) Topp in view of Andersson in view of ABB in view of Fielding discloses the method according to claim 1, wherein the response message is adapted according to the contextual information (Fielding, page 133 sections 14.42 and 14.43) by an Aspect System Object (Topp, figure 6).

Regarding claim 5, (previously amended) Topp in view of Andersson in view of ABB in view of Fielding discloses the method according to claim 4, wherein the response message is adapted as an HTTP response (Topp, figure 2).

Regarding claim 6, (previously amended) Topp in view of Andersson in view of ABB in view of Fielding discloses the method according to claim 4, wherein the response message is adapted according to extensible markup language (Topp, figure 3, section 3.4 "SOAP...is a XML based specification for message based communication"; "possible to expose your aspect system as XML" ABB page 59 section 5.3.1).

Regarding claim 7, (previously amended) Topp in view of Andersson in view of ABB in view of Fielding discloses the method according to claim 1, wherein the Aspect Object during run-time inherits the Aspect from another Aspect Object through a hierarchical structure, wherein the Aspect Object during run-time inherits the association of the Aspect System Object (Andersson, figures 4 and 5, page 16 lines 3-10).

Regarding claim 8, (currently amended) Topp in view of Andersson in view of ABB in view of Fielding discloses the method according to claim 1, wherein the <u>world wide</u> web presentation unit is a standard web browser (Topp, page 144 section 2.4 "embedded web server, which offers a HTML based user interface and allows the user to do...tasks using a standard internet browser").

Regarding claim 10, (previously amended) Topp in view of Andersson in view of ABB in view of Fielding discloses method according to claim 1, wherein the contextual information of the world wide web presentation unit describes technical

characteristics of the world wide web presentation unit (Fielding, page 133 section
14.42 "request-header field", "user agent originating the request").

Regarding claim 11, (currently amended) Topp in view of Andersson in view of
ABB in view of Fielding discloses the method according to claim 1, wherein the
identifying in the software application comprises evaluating in the software application
which function of the Aspect System Object the software application should query for a
reference based on the identified Aspect Object, the Aspect of the Aspect Object ("client
simply queries the Composite Object for the function associated with the Aspect" and
"Composite Object examines its Aspects…" Andersson page 13 lines 3-4 and 25-31)
and based on the contextual information (ABB, page 58 section 5.3 "mapping of aspect
as URLs" and page 59 section 5.3.1 "to make your aspect system viewable on a thin
client…Reference to a .Net Control…Reference to a asp.Net web page").

Regarding claim 12, (currently amended) Topp in view of Andersson in view of
ABB in view of Fielding discloses a control system comprising a web server (Topp,
figure 6), an Aspect Object, an Aspect System Object and a software application (Topp,
figures 1-3; Andersson, Abstract, "Composite Object", "Aspect System Object", page 14
lines 28-29 "aspect system"), wherein the system executes a method which is the same
as method of claim 1; therefore, the limitations regarding executed method are rejected
by the same reasons as rejection for claim 1 above.

Regarding claim 13, (currently amended) Topp in view of Andersson in view of
ABB in view of Fielding discloses a computer program product, comprising:

computer program instructions <u>stored in a device and a control system</u> which when run on a computer or a processor causes said computer or processor (Topp, figure 5 and "microprocessor in use has a twofold task..." page 147 paragraph before figure 5; Andersson, page 5 lines 8-10, page 22 lines 32-33) to carry out a method which is essentially the same as method of claim 1; therefore the limitations regarding the method being carried out are rejected by the same reasons as rejection for claim 1 above

Regarding claim 15, (previously presented) Topp in view of Andersson in view of ABB in view of Fielding discloses the method according to claim 10, wherein technical characteristics of the world wide web presentation unit comprise type of web browser, available plug-ins or screen resolution (Fielding, page 133 section 14.42 "CERN-LineMode/2.15").

Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Topp et al. ("Web Based Service for Embedded Devices") in view of Andersson et al. (WO 01/02953) in view of ABB ("Integrate IT Aspect Integrator Platform™ Version 2.0: Integration Guideline") in view of Fielding et al. (RFC 2068: Hypertext Transfer Protocol -- HTTP/1.1") as applied to claim 8 above, and further in view of Pyotsia et al. (US 7010294).

Regarding claim 9, (previously amended) Topp in view of Andersson in view of ABB in view of Fielding discloses the method according to claim 8 but may not have been clear on weather the client device equipped with web browser is a wireless device.

Pyotsia discloses a control system which can be control wirelessly through a mobile terminal communicating through Internet (Pyotsia, figures 2, 3 and 6; "the field device control system is provided with a interactive user interface which is accessible by the mobile terminal" column 3 lines 44-46; "The interactive user interface is a WWW page or a set of WWW pages" column 4 lines 10-11) Pyotsia discusses a mobile terminal with a web browser for displaying the WWW page(s) containing information of field devices.

It would have been obvious to the person of ordinary skill in the art, at the time of the invention, to have included the mobile devices with web browser as discussed in Pyotsia with the system of Topp in view of Andersson in view of ABB in view of Fielding in order to provide flexibility in location of user who would like to access data of and control field devices on the go (Topp, sections 2.1 and first paragraph of section 2.2)

Regarding claim 14, (previously presented) Topp in view of Andersson in view of ABB in view of Fielding in view of Pyotsia discloses the method according to claim 9, wherein the wireless device is a cell phone Personal Digital Assistant, a cell phone or a handheld computing device (Pyotsia, "wireless devices, such as mobile telephones…personal digital assistance" column 6 lines 46-48; "MT may be a standard mobile phone or similar device" column 8 lines 23-25).

REMARKS

The Applicant Argues:

That there is no motivation for modifying Andersson workable solution with the teachings of Topp.

In response, the examiner respectfully submits:

The rejection is maintained because Topp suggests improving the industrial automation control system, such as Andersson's, with web services provision to remote user (Topp, page 141 Introduction) by embedding web server into the controller to provide such web services.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Papadopoulos et al. (US 6061603) and Dube (US 2002/0152289) disclose web accessible industrial devices automation control similar to invention as claimed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUPAPORN NILANONT whose telephone number is (571) 270-5655. The examiner can normally be reached on Monday through Thursday and alternate Friday at 8:30 AM - 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jeffrey C. Pwu can be reached on (571) 272-6798. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. N./
Examiner, Art Unit 2446

/Jeffrey Pwu/
Supervisory Patent Examiner, Art Unit 2446